FUJITSU

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PRIMEPOWER

Hardware Platform Guide: Operation for Solaris™ 10 Operating System

-- Start Here--

Preface

Solaris™ Operating System is described as Solaris in this manual.

Purpose

This manual provides notes necessary after installing the Solaris 10 on PRIMEPOWER.

Intended Readers

This manual is intended for system administrators who install Solaris™ Operating System (Solaris) and operate it.

Readers are expected to have the basic knowledge of a system administrator.

Organization

This manual is organized as follows:

- Chapter 1 Notes after the Installation
  This chapter describes post-installation notes.
- Chapter 2 Backup and Restore of System Disk (PRIMEPOWER 1/200/250/400/450/600/650/850)
  This chapter explains the procedures for backup/restore of the disk (hereafter called, the system disk) containing the Solaris software.
- Chapter 3 Backup and Restore of System Disk (PRIMEPOWER 800/900/1000/1500/2000/2500)
  This chapter explains the procedures for backup/restore of the disk (hereafter called, the system disk) containing the Solaris software.
- Chapter 4 Secondary LAN port on PRIMEPOWER250/450
  This chapter describes how to use the secondary LAN (10/100/1000Mbps) port on PRIMEPOWER 250/450.
- Chapter 5 Precautions
  This chapter explains precautions when using Solaris 10.

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Notes

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Chapter 1 Notes after the Installation

This chapter describes the post-installation notes.

1.1 PRIMEPOWER - Specific Notes

1.1.1 Modifications of Solaris OS (Patches, PTF, Program Local Fix)

Only the modifications (patches, PTF, Program Local Fix, etc.) for PRIMEPOWER provided by FUJITSU LIMITED can be applied to existing PRIMEPOWER systems running Solaris OS software.
Do not use patches provided by Sun Microsystems, Inc. on the World Wide Web or those provided by other vendors. Also be careful that you do not apply modifications (patches, PTF, Program Local Fix, etc.) intended for other systems (GP7000D, etc.) provided by FUJITSU LIMITED.
For information on Solaris OS modifications, contact a FUJITSU systems engineer.

1.1.2 Changing the date and time

PRIMEPOWER 1/200/250/400/450/600/650/850

Use the date command in single user mode if you need to change the date and time for testing purposes.

PRIMEPOWER 800/900/1000/1500/2000/2500

See "System Console Software User's Guide" for information on how to change the date and time.

1.1.3 Serial port

1.1.3.1 PRIMEPOWER800/1000/2000

- All serial ports on the system board are to be used for the System Management Console.
- Do not access the following devices relating to serial ports. Also do not change the setting of applications using the following device files (such as a port monitor).
  - /dev/term/a, b, ...
  - /dev/cua/a, b, ...
  - /dev/term/fa000, fa001, ...
  - /dev/cua/fa000, fa001, ...
  - /dev/se_hdlc
  - /dev/se_hdlc0, /dev/se_hdlc1, ...

  However, devices that are not used as the console path may be used, but only for the FJVTS and SunVTS. The usable default devices for FJVTS and SunVTS are /dev/term/fa003, fa004, ... and /dev/se_hdlc3, se_hdlc4, ...

1.1.3.2 PRIMEPOWER900/1500/2500

- The device name of the serial port will be as follows:

- /dev/term/fa000, fa001, ...
- /dev/cua/fa000, fa001, ...
- /dev/se_hdlc0, se_hdlc1, ...

Because the number of this device name is allocated from the instance number of driver, this number does not necessarily correspond to the slot number of the system board.

- Do not change the setting of port monitor, etc. to the serial port for the console. Because the physical device of the serial port used for the console is the physical device path which are linked from logical device under /dev/fjse directory, the logical devices under /dev/term and /dev/cua, and /dev/se_hdlcX files, which link to above-mentioned physical device path, are devices used for the console.
- Other than the serial port for consoles, five serial ports can be used by the user. However, keep in mind that it is necessary to stop beforehand the application that is using the serial port of the system board or the PCI/disk BOX in order to disconnect the system board by Dynamic Reconfiguration.
- Only the devices that are not used as a console path, can be used for FJVTS and SunVTS.

1.1.4 Gigabit Ethernet port on PRIMEPOWER250/450

PRIMEPOWER250/450 has a Gigabit Ethernet port as standard equipment. For how to use the Gigabit Ethernet port, refer to "Chapter 4 Secondary LAN port on PRIMEPOWER250/450."

1.1.5 Fibre Channel Cards (PW008FC3, PW008FC2 or GP7B8FC1)

Install the following versions of drivers:
FUJITSU PCI Fibre Channel 3.0 or later.
To install the driver, use the installer in the driver CD-ROM that is provided with the Fibre Channel Card. If you don't have the driver CD-ROM mentioned above, download it from the following page.
http://www.fujitsu.com/support/computing/server/unix/driver/

Install the driver again after an update of Solaris 10.
For more detailed information, refer to "FUJITSU PCI Fibre Channel 3.0 Installation Guide" that is provided with the driver CD-ROM or the page described above.

1.1.6 Time for booting Solaris

When booting Solaris 10 10/08 or later from Solaris CD/DVD or from the network via network instances such as hme/qfe, it may take more time (approx. 20 minutes) than previous releases.

Example

```
{0} ok  boot net
Boot device: /pci@80,4000/network@1,1  File and args:
* This interval may be longer than previous releases.
SunOS Release 5.10 Version Generic_xxxxxx-xx 64-bit
....
```

1.1.7 Error messages displayed after booting from Solaris DVD

If Enhanced Support Facility has been already installed on the system, the following error messages (max. 32 lines) may be displayed on the console at the first time of the boot from the system disk after the boot from the Solaris CD/DVD which is Solaris 10 10/08 or later, but the error messages can be ignored safely.

```
Sep 11 09:50:00 xxxx FJSVmadm[1505]: pw450:FJSVmadm:A:-:OBP:Detected
hardware error occurred at Jul 16 08:36:15 JST
```

Also, the following messages are stored many times in XSCF log, too. The error messages can be ignored safely.

```
SCF> show-error-logs <Return>
***** No.01/32
 Date       = 2008/09/16 09:47:00
 SysDamage   = ALARM(STOP)
 FaultDetect = OBP
 FaultCode   = 260000FF
 DetailInfo  = [BOOTB]Boot Block error
 ReplaceParts= ---
 Syslog msg  = Detected hardware error
    30C97830 260000FF 08071523 3615FFFF
    5B424F4F 54425D42 6F6F7420 426C6F63
    6B206572 726F7200 00000000 00000000
    00000000 00000000 00000000 00000000
```

1.2 Solaris OS - Notes and Bug Information

1.2.1 The order of instance numbers of optional cards

If an additional option card is installed, the instance number on the card might be assigned out of order. Additional installation by Dynamic Reconfiguration or PCI Hot-plug is also applicable but replacement by Dynamic Reconfiguration or PCI Hot plug is not applicable.
If you need to assign the instance numbers orderly, follow these steps below.

1. Set the following in /etc/system.

```
set mtc_off=1
```

2. Reboot the system.
3. Install the optional card.

After the above setting, it may take longer time to reboot the system. If that affects the system, delete the line and reboot the system.

1.2.2 Notes on Solaris OS operation

CD-ROM/DVD-ROM in UNIX file system (UFS) format

Do not use any CD-ROM/DVD-ROM in UNIX file system (UFS) format that is not produced for the Solaris OS.
Even if the file system in such a CD-ROM / DVD-ROM is in UFS format, it's file construction may differ from that of a Solaris system. If such a CD-ROM / DVD-ROM is used, serious problems, including a system crash may occur.

Enter the OpenBoot environment

The following operations on a running system will enforce the system to move to Open Boot mode, which might damage data.

- Connecting / Disconnecting the keyboard cable to / from the system.
- Sending a Break signal from the console terminal connected to the serial port.
- Turning on/off the power to the unit connected to the serial port of the system.
  (This power on/off is treated as a Break signal.)

To prevent a system from entering the Open Boot mode, do the following:

PRIMEPOWER 200/400/600

- Set the MODE switch on the operation panel of the system to "SECURE" mode.
- Set OBP command (PROM command) to disable a Break signal. For more detailed information, refer to "PRIMEPOWER USER'S MANUAL."

PRIMEPOWER 250/450/650/850/800/900/1000/1500/2000/2500

- Set the MODE switch on the operation panel of the system to "LOCK" mode.
- Set OBP command (PROM command) to disable a Break signal. For more detailed information, refer to "PRIMEPOWER USER'S MANUAL."

PRIMEPOWER1

- Change the default keyboard abort sequence effect with kbd commnd.

```
# /usr/bin/kbd -a disable <Return>
```

- Change the /etc/default/kbd setting
  1. Edit the /etc/default/kbd as follows:

```
KEYBOARD_ABORT=disable
```

  2. Set keyboard defaults from the /etc/default/kbd file.

```
# kbd –i <Return>
```

- Set OBP command (PROM command) to disable a Break signal. For more detailed information, refer to "PRIMEPOWER USER'S MANUAL."

Single-user mode

If you enter the system in single-user mode with the following commands, the run-level of the init process displayed by the who -r command may be displayed incorrectly. In this case, the commands pkgadd, patchadd, etc. may terminate.

/sbin/init s
/sbin/init S
/usr/sbin/shutdown [-y] [-gN] -is (N: numeral)
/usr/sbin/shutdown [-y] [-gN] -iS (N: numeral)

To avoid this problem follow the steps below.

1. Enter the OpenBoot environment.

```
# /usr/sbin/shutdown -y -g0 -i0 <Return>
```

2. When the ok prompt is displayed, boot the system with the following command.

```
ok boot -s <Return>
```

Transport protocols for NFS version 2/3

Although NFS version 2/3 can use either TCP or UDP as the transport protocol, it is recommended to use TCP. If UDP is used on a poor quality network(in which packet loss occurs or transfer takes too long time etc.), overall performance, stability and / or security may be degraded and further problems may occur. Special NFS client settings may be necessary to use TCP for NFS. For more detailed information, refer to the NFS client manual.

From Solaris 2.6 or later, NFS clients can be made to use the TCP protocol, by specifying "proto=tcp" as the mount option. If the protocol to be used is not specified, mounting NFS using TCP is first attempted, If that fails, mounting NFS using UDP is attempted.

How to eject a diskette

When you want to eject a diskette, follow the instructions described below. If not followed, data may be damaged.

For more detailed information, refer to "Managing Removable Media" in "System Administration Guide."

4. Make sure the diskette is not being used.
5. Run the following command.

```
# eject floppy0 <Return>
```

6. Make sure the Access LED has turned off.

7. Press the Eject button on the diskette drive unit, then eject the diskette.

WARNING messages of se driver

When a serial port receives a lot of data, such as when a large amount of text is pasted on a console screen connected to a serial port, the console message "seN: Buffer overrun" (N means an instance number of se driver) will be displayed and the data will be lost.
This is because the user process cannot read data fast enough.
The size of data pasted on a console screen should be 1024 bytes or less at a time.
Speed of reception depends on each user process.

1.2.3 Notes on PCI cards

How to install PCI cards

To install a new PCI card, follow the steps described below.
Also, when you remove the PCI card or change the slot, do the following steps.

For PRIMEPOWER 1

1. Enter the OpenBoot environment.

```
# /usr/sbin/shutdown -y -g0 -i0 <Return>
```

2. Enter the following command to stop the system in the OpenBoot environment at the next system boot.

```
ok setenv auto-boot? false <Return>
```

3. Turn off the power to the system.

```
ok power-off <Return>
```

4. Install the PCI card to the system. (For more detailed information, refer to the manual attached to the card.)
5. After you turn on the power, the OK prompt will be displayed. Boot the system with the following command.

```
ok setenv auto-boot? true <Return>
ok boot -r <Return>
```

Some of the PCI cards need driver software. If that is the case, use the following steps:

6. Add driver software. (For more detailed information, refer to the manual attached to the card.)
7. Enter the Open Boot Environment. Some of the manuals attached to the card may instruct "Reboot your machine", which means to enter the Open Boot Environment with the following command.

```
# /usr/sbin/shutdown -y -g0 -i0 <Return>
```

8. When the OK prompt is displayed, boot the system with the following command.

```
ok boot -r <Return>
```

For PRIMEPOWER 200/400/600

1. If the system is running, turn off the power to the system with the following command:

```
# /usr/sbin/shutdown -y -g0 -i5 <Return>
```

2. Install the PCI card to the system. (For more detailed information, refer to the manual attached to the card.)
3. Set the MODE switch on the operation panel to "MANUAL" mode and turn on the power.
4. After you turn on the power, the OK prompt will be displayed. Boot the system with the following command.

```
ok boot -r <Return>
```

5. Return the MODE switch on the operation panel to "SECURE" mode.

Some of the PCI cards need driver software. If that is the case, use the following steps:

6. Add driver software. (For more detailed information, refer to the manual attached to the card.)

7. Enter the Open Boot Environment. Some of the manuals attached to the card may instruct "Reboot your machine", which means to enter the Open Boot Environment with the following command.

```
# /usr/sbin/shutdown -y -g0 -i0 <Return>
```

8. When the OK prompt is displayed, boot the system with the following command.

```
ok boot -r <Return>
```

For PRIMEPOWER 250/450/650/850/800/900/1000/1500/2000/2500

1. If the system is running, turn off the power to the system with the following command:

```
# /usr/sbin/shutdown -y -g0 -i5 <Return>
```

2. Install the PCI card to the system. (For more detailed information, refer to the manual attached to the card.)
3. Set the MODE switch on the operation panel to "UNLOCK" mode and turn on the power.
4. After you turn on the power, the OK prompt will be displayed. Boot the system with the following command.

```
ok boot -r <Return>
```

5. Return the MODE switch on the operation panel to "LOCK" mode.

Some of the PCI cards need driver software. If that is the case, use the following steps:

6. Add driver software. (For more detailed information, refer to the manual attached to the card.)
7. Enter the Open Boot Environment. Some of the manuals attached to the card may instruct "Reboot your machine", which means to enter the Open Boot Environment with the following command.

```
# /usr/sbin/shutdown -y -g0 -i0 <Return>
```

8. When the OK prompt is displayed, boot the system with the following command.

```
ok boot -r <Return>
```

On PRIMEPOWER450 (Rackmount Type(7U))/900/1500 (with SPARC64 V)/2500, you are able to use PCI Hot Plug function, which is included in Enhanced Support Facility. If you use PCI Hot Plug function, refer to "PCI Hot Plug User’s Guide" in Enhanced Support Facility.

1.2.4 Setting Up PRIMEPOWER MIB Information

If you introduce the network management software and want the machine to be monitored using its proper model name, you have to set up the MIB information as described below.

1. Log in as a superuser.

2. Stop the Solstice Enterprise Agent (SEA) daemon.

```
# /etc/init.d/init.snmpdx stop <Return>
```

3. Check the model name with the following command. Note the displayed model name.

```
# /usr/sbin/FJSVmadm/hrdconf | head -1 <Return>
```

Example:

```
PRIMEPOWER400
```

4. Modify the /etc/snmp/conf/snmp.conf file.

Before modification:

```
sysdescr Sun SNMP Agent,
```

After modification:

```
sysdescr Fujitsu SNMP Agent, model_name
```

Write the model name displayed in the step 3, in the place of “model_name”.

You can customize the above sysdescr string the way you like. But some network management software refers to "model-name", please check whether SNMP is running on the system.

5. Restart the Solstice Enterprise Agent (SEA) daemon.

```
# /etc/init.d/init.snmpdx start<Return>
```

1.2.5 Other notes and bug information

For other notes and bug information during the system operation, refer to the following document:

- "Solaris 10 Release Notes "

1.3 Unsupported Features

The following features described in Solaris OS manuals are not supported.

Table 1.1 Unsupported features

No.	Description	Alternative method	Reference manual
1	The Suspend-Resume features, cannot be used with PRIMEPOWER.	None	"Solaris Common Desktop Environment: User's Guide" in "Solaris 10 Common Desktop Environment User Collection"

Note:

There are some differences between the power management system provided by Solaris OS and Auto Power Control System provided by Enhanced Support Facility. In the Auto Power Control System, you can set AutoShutdown and AutoWakeup features on PRIMEPOWER. However, Auto Power Control System is not supported with PRIMEPOWER1.

Chapter 2 Backup and Restore of System Disk (PRIMEPOWER1/200/250/400/450/600/650/850)

This chapter explains the procedures to backup/restore the disk (hereafter called, the system disk) containing the Solaris OS software.

2.1 Types of Backup Procedures

Backup of the system disk requires that the disk and slices to be backed up not be in use. The system disk contains file systems (such as the root (/) file system) that cannot be unmounted. In backing up the system disk, special procedures are required.
The following are some of the typical ways to back up the Solaris OS disk.
Understanding them will help you choose the appropriate method to back up your system disk properly.
For more detailed information about the procedure mentioned in a., see each subsection from "2.2 Backup and Restore of File System Unit."
For more detailed information about the procedure mentioned in d., see each subsection from "2.3 Backup and Restore of Disk Unit."

a. To back up a file system unit, use the ufsdump(1M) command after booting in single-user mode.
If you are restoring, use the ufsrestore(1M) command after booting from the Solaris OS CD/DVD to restore the file system unit.
- The file system that will be backed up is only the ufs file system.
- Disk partition information such as the size of each file system will not be backed up. You must record this information separately.
- The ufsdump(1M) command backs up a file system divided into file units so it is possible to restore to a disk having a different file system size. If only a limited amount of space has been used in the file system, this may back up into a space smaller than the size of the file system. When backing up using the ufsdump(1M) command, it is possible to only restore selected files.

b. To back up a file system unit, use the ufsdump(1M) command after booting from the Solaris OS CD/DVD.
If you are restoring, use the ufsrestore(1M) command after booting from the Solaris OS CD/DVD to restore the file system unit.
- The file system that will be backed up is only the ufs file system.
- Disk partition information such as the size of each file system will not be backed up. Therefore, you must record this information separately.
- The ufsdump(1M) command backs up the file system divided into file units, so it is possible to restore to a disk having a different file system size. If only a limited amount of space has been used in the file system, this may back up into a space smaller than the size of the file system. When backing up using the ufsdump(1M) command, it is possible to only restore selected files.

c. To back up a slice unit, use the dd(1M) command after booting from the Solaris OS CD/DVD.

If you are restoring, use the dd(1M) command after booting from the Solaris OS CD/DVD to restore the slice unit.

- If you back up slice 0, it will only be possible to restore to a disk having the same physical properties (disk space, number of cylinders) as the original.
- Disk partition information such as the size of each slice will not be backed up. You must record this information separately.

d. To back up a disk unit, use the dd(1M) command after booting from the Solaris OS CD/DVD. If you are restoring, use the dd(1M) command after booting from the Solaris OS CD/DVD, to restore the disk unit.

- Because this procedure backs up the disk unit, it is only possible to restore to a disk having the same physical properties (disk space, number of cylinders) as the original.

Depending on the tape device, you might have to observe some precautions when backing up or restoring. Consult the manual of the tape device before such actions.
It is recommended that you select the SCSI device having the target ID 0 for Solaris OS installation. In this case, the device name of the system disk will be "c0t0d0" obtained from the controller number (0), target ID (0), and LUN number (0). If you install Solaris OS on a disk, having a controller number other than 0, the controller number may change later depending on whether booting took place from a CD/DVD or a hard disk. Thus when referring to disk device, check that it's name haven't changed due to the reason described above.
If you apply the optional software that contains modules that run as part of the driver and file system of the system disk, carefully follow the instructions and notes described in the manuals supplied with each software option.
For example, if you configure disk mirroring using PRIMECLUSTER GDS, you must select the backup procedures mentioned in b. In addition, if the system disk contains a file system other than a ufs file system such as PRIMECLUSTER GFS, you must select the backup procedures using the backup command provided in the file system or the dd(1M) command.

2.2 Backup and Restore of File System Unit

The following describes how to back up the file system unit using the ufsdump(1M) command. "Solaris System Administration Guide" also describes the following procedures.
Note that disk partition information such as the size of each slice will not be backed up. Therefore, you must record the information separately using the prtvtoc(1M) or format(1M) commands.

```
# prtvtoc XXXX <Return>
```

or

```
# format XXXX <Return>
format> partition
partition> print
```

The "XXXX" in the above example is the character device name of the target disk. Use slice 2 of the disk, like :
/dev/rdsk/c0t0d0s2.

2.2.1 Backup of File System Unit

In single-user mode use the following procedures to back-up each file system. After backing up, reboot the system.

1. Boot the system in single-user mode.

```
ok boot -s <Return>
```

2. Backup the file system with the ufsdump(1M) command.
   Example: Backup to the "/dev/rmt/0."

```
# ufsdump 0ucf /dev/rmt/0 / <Return>
```

2.2.2 Restore of File System Unit

When restoring the file system unit, the Solaris OS is booted from the Solaris 10 CD1 or Solaris 10 DVD. After booting Solaris OS, mount the disk to be restored temporarily, and then restore the file system unit. Follow the procedures below to restore each file system. After restoring, reboot the system. If using a new disk or a disk previously used for other purposes, create a boot block after creating disk slices and a disk label with the format (1M) command, before starting the restoration process.
If optional software like PRIMEPOWER GDS, which runs as a part of the kernel is installed in the system, extra care should be taken as the Solaris CD/DVD does not contain these modules. In such a case, consult the manual of the respective optional software.

1. Boot the Solaris OS from the CD/DVD in single-user mode.

```
ok boot cdrom -s <Return>
```

2. If you use a new disk or a disk previously used for other purposes, create a disk slices and a disk level with the format(1M) command.

```
# format <Return>
```

For information on how to create a disk slice and a disk level using the format(1M) command, see the manuals.

Create a boot block with the installboot(1M) command.

```
# installboot /usr/platform/`uname -i`/lib/fs/ufs/bootblk XXXX <Return>
```

For information on how to create a boot block using the installboot(1M) command, see the manuals.

The "XXXX" in the above example is the character device name of the target disk. Use slice 0 of the disk, like : /dev/rdsk/c0t0d0s0.

3. Create a new file system with the newfs(1M) command.

```
# newfs XXXX <Return>
```

The "XXXX" in the above example is the character device name of the target disk, like : /dev/rdsk/c0t0d0s0.

4. Mount the file system with the mount(1M) command.

```
# mount -F ufs YYYY /mnt <Return>
```

The "YYYY" in the above example is the block device name of the target disk, like : /dev/dsk/c0t0d0s0.

5. Change to the mounted directory.

```
# cd /mnt <Return>
```

6. Restore the file system with the ufsrestore(1M) command.
   Example: Restore from the "/dev/rmt/0."

```
# ufsrestore rvf /dev/rmt/0 <Return>
```

7. Remove the restoresymtable file created by the ufsrestore(1M) command.

```
# rm restoresymtable <Return>
```

8. Change the directory to the root (/), and unmount the file system.

```
# cd / <Return>
# umount /mnt <Return>
```

9. Check the integrity of the file system with fsck(1M) command.

```
# fsck XXXX <Return>
```

The "XXXX" in the above example is the character device name of the target disk, like :

/dev/rdsk/c0t0d0s0.

2.3 Backup and Restore of Disk Unit

When backing up a disk unit, use the dd(1M) command. The following describes how to back up a disk unit to a tape device using the dd(1M) command. The backup records physical properties such as disk space and a number of cylinders, so it is only possible to restore to a disk having the same physical properties. The prtvtoc(1M) command displays the physical properties as " Dimensions."

```
# prtvtoc XXXX <Return>
```

Specify the slice 2 of character special disk (/dev/rdsk/...) to be backed up such as "/dev/rdsk/c0t0d0s2" with the format(1M) command.

2.3.1 Backup of Disk Unit

In the backup of a disk unit, the Solaris OS is booted from the Solaris 10 CD1 or Solaris 10 DVD. After backing up, reboot the system.

1. Boot the Solaris OS from the CD in single-user mode.

```
ok boot cdrom -s <Return>
```

2. Back up the disk unit with the dd(1M) command.
   Example: Backup to the "/dev/rmt/0."

```
# dd if=XXXX of=/dev/rmt/0 bs=64k <Return>
```

Specify the character special disk name (/dev/rdsk/c0t0d0s2) to be backed up such as "/dev/rdsk/..." with the dd(1M) command. In this case, you must specify the "s2" as the entire disk.

2.3.2 Restore of Disk Unit

In the restore of a disk unit, the Solaris OS is booted from the Solaris 10 CD1 or Solaris 10 DVD. After restoring, reboot the system.

1. Boot the Solaris OS from the CD in single-user mode.

```
ok boot cdrom -s <Return>
```

2. Restore the disk unit with the dd(1M) command.
   Example: Restore from the "/dev/rmt/0."

```
# dd if=/dev/rmt/0 of=XXXX bs=64k <Return>
```

Specify the character special disk name (/dev/rdsk/c0t0d0s2) to be backed up such as "/dev/rdsk/..." with the dd(1M) command. In this case, you must specify the "s2" as the entire disk.

Chapter 3 Backup and Restore of System Disk (PRIMEPOWER800/900/1000/1500/2000/2500)

This chapter explains the procedures to backup/restore the disk (hereafter called, the system disk) containing the Solaris OS software.

3.1 Types of Backup Procedures

Backup of the system disk requires that the disk and slices being backed up not be in use. The system disk contains file systems (such as the root (/) file system) that cannot be dismounted. In backing up the system disk, the special procedures are required.
The following are some of the typical ways to back up a Solaris OS system disk. Understanding them will help you choose the appropriate method to back up your system disk properly.
For detailed information about the backup procedures mentioned in b. and d., see " System Console Software User's Guide."

a. To back up a file system unit, use the ufsdump(1M) command after booting in single-user mode.
   If you are restoring, use the ufsrestore(1M) command after booting from the Solaris OS CD/DVD to restore the file system unit.
   - The file system that will be backed up is only the ufs file system.
   - Disk partition information such as the size of each file system will not be backed up. You must record the information separately.
   - The ufsdump(1M) command backs up the file system divided into the file unit, so it is possible to restore to a disk having a different file system size. If a limited amount of space has been used in the file system, this may back up into a space smaller than the size of the file system itself. When backing up using the ufsdump(1M) command, it is possible to restore only the file that you select.

b. To back up a file system unit, use the ufsdump(1M) command after booting from the Solaris OS CD/DVD.
   If you are restoring, use the ufsrestore(1M) command after booting from the Solaris OS CD/DVD to restore the file system unit.
   - The file system that will be backed up is only the ufs file system.
   - Disk partition information such as the size of each file system will not be backed up. You must record the information separately.
   - The ufsdump(1M) command backs up the file system divided into the file unit, so it is possible to restore to a disk having a different file system size. If limited amount of space has been used in the file system, this may back up into a space smaller than the size of the file system. In the backup using the ufsdump(1M) command, it is possible to restore only the file that you select.

c. To back up a slice unit, use the dd(1M) command after booting from the Solaris OS CD/DVD.
   If you are restoring, use the dd(1M) command after booting from the Solaris OS CD/DVD to

restore the slice unit.

- If you back up slice 0, it will only be possible to restore to a disk having the same physical properties (such as disk space and a number of cylinders) as the original.
- Disk partition information such as the size of each slice will not be backed up. You must record the information separately.

d. To back up the disk unit, use the dd(1M) command after booting from the Solaris OS CD/DVD.
If you are restoring, use the dd(1M) command after booting from the Solaris OS CD/DVD to restore the disk unit.

- The procedure divides the disk unit for back up, so it is only possible to restore to a disk having the same physical properties (such as disk space and a number of cylinders) as the original.

It is recommended that you select the SCSI device with target ID 1 for Solaris OS installation. Before selecting the disk to install Solaris OS, make sure it is connected to the SCSI adapter plugged into the PCI slot of PCI0B. In this case, the device name of the system disk will be "c0t1d0" (obtained from the controller number (0), target ID (1), and LUN number (0)). If you install Solaris OS to other than the disk having the device name "c0t1d0", (especially, a disk having the controller number other than 0) take care to carefully obtain the correct device name.
If applying the optional software that runs as part of the driver and file system from the system disk, carefully follow the instructions and notes described in the manual of each option. For example, if you configure disk mirroring using PRIMECLUSTER GDS, you must select the backup procedures described in a. above, because the PRIMECLUSTER GDS driver does not exist in the CD/DVD files. In addition, if the system disk contains a file system other than the ufs file system such as PRIMECLUSTER GFS, select the backup procedures using the backup command provided in the file system or the dd(1M) command.

Chapter 4 Secondary LAN port on PRIMEPOWER250/450

This chapter describes how to use the secondary LAN (10/100/1000Mbps) port on PRIMEPOWER250/450.

4.1 Outline

The secondary LAN port on PRIMEPOWER250/450 is controlled by FUJITSU PCI Gigabit Ethernet Driver (Interface name is “fjgi”) included in Solaris 10.

4.2 Notes

- When using 1000 Mbps communication, be sure to set Autonegation to 'on'.
- If using the PCI card (PW008GE4/PW008GE5/PW008QG1), please refer to the User’s guide attached with the PCI card.

4.3 How to Set Configuration Information

This section describes required setting to use a fjgi interface.

4.3.1 Environment Setting

This section describes how to edit files required to build environment.

4.3.1.1 Determining the Client Name of Target Driver

1. To use the secondary LAN port as an IPv4 interface:
   To allocate the IP address or hostname to the fjgi interface, edit /etc/hostname.fjgi* (* is an numerical value) file. About netmask value, please see "4.3.1.3 Defining Netmask Value" .

   Example /etc/hostname.fjgi*:
   Define the unique hostname:
   ```
   giga-v4
   ```
   or, define the IP address:
   ```
   192.168.150.1
   ```
   Note: If you defined the hostname in hostname.fjgi* file, see the section "4.3.1.2 Defining Hostname " for detailed information.

2. To use the secondary LAN port as an IPv6 interface
   To allocate the IP address and prefix to the fjgi interface, edit /etc/hostname6.fjgi* (* is an numerical value) file.

Example /etc/hostname6.fjgi*:

Define the unique hostname (This sample named giga-v6):

```
addif giga-v6/120 up
```

Note: If you defined the hostname in hostname.fjgi* file, see the section "4.3.1.2 Defining Hostname" for detailed information.

3. To use the GigabitEthernet as an VLAN interface:

See "4.3.2.6 Configuring VLAN interface", and after defining VLAN name, proceed with above 1 or 2 procedure.

4.3.1.2 Defining Hostname

Defining an IP address with a unique hostname.

1. To use secondary LAN port as an IPv4 interface:

Edit IPv4 address and hostname into the /etc/hosts file.

Example /etc/hosts file:

```
# IP Address           Hostname
190.168.150.1          giga-v4
```

2. To use secondary LAN port as an IPv6 interface:

Edit IPv6 address and hostname into the /etc/inet/ipnodes file.

Example /etc/inet/ipnodes file:

```
# IP Address           Hostname
fe80::2e0:ff:fea6:2222   giga-v6
```

4.3.1.3 Defining Netmask Value

To use secondary LAN port as an IPv4 interface, define a netmask value with the IP address into /etc/netmasks file.

Example /etc/netmasks file:

```
# IP Address           netmask
192.168.150.0          255.255.255.0
```

4.3.2 Setting the Operation Mode

This section explains how to edit the file or implement a command to change the operation mode. When you use a secondary LAN port **without** the default method of automatic setup of speed/duplex/flowcontrol by autonegotiation, change the operation mode with the procedures described below:

4.3.2.1 fjgi.conf file

When not using the default operation mode described in 4.3.2, you should use the /platform/sun4us/kernel/drv/fjgi.conf file. The set-up procedure of this file is described below:

4.3.2.1.1 Parameters List

The following table shows the list of the parameters in which setting change is possible.

Table 4.1 Parameters List

Parameter	Value	Description
name	fjgi	When using PRIMEPOWER250/450 secondary LAN port, please set name="fjgi".
	FJSV,pgtb	When using PCI card PW008GE5, please set name="FJSV,pgtb".
	FJSV,pgsb	When using PCI card PW008GE4, please set name="FJSV,pgsb".
parent	Please refer to “4.3.2.1.2 How to Set Parameter”.	The location of the device node in a device tree is specified.
unit-address	Please refer to “4.3.2.1.2 How to Set Parameter”.	The address within a device node is specified.
AutoNegotiation_A	On (Default)	AutoNegotiation is enabled. (In this setting, unable to connect to the remote device of a fixed mode.) When you use 1000Mbps, please use in Autonegotiation_A="On" (default) mode.
	Off	AutoNegotiation is disabled. (Fixed mode)
LinkSpeed_A	Auto (Default)	Connect in 1000/100/10Mbps by the connection partner.(This can be set when AutoNegotiation_A="On".)
	1000	Connect in 1000Mbps.
	100	Connect in 100Mbps.
	10	Connect in 10Mbps.
DuplexCapabilities_A	Both (Default)	Indicating that both Full-Duplex and Half-Duplex are being supported. (This can be set when AutoNegotiation_A="On".)
	Half	Half-Duplex operation is allowed.
	Full	Full-Duplex operation is allowed.
FlowControl_A	Auto (Default)	A flow control is performed according to a setup of partner equipment.
	Rem	Only the flow control from the remote machine is allowed. The flow control to the remote machine is not allowed.
	LocSend	Only the flow control from the main unit is allowed. The flow control from the remote machine is not allowed.
	None	Flow control is disabled.

Parameter	Value	Description
Role_A	Auto (Default)	Auto select Master or Slave by the partner. (This can be set when AutoNegotiation_A= On.)
	Master	Communicate by Master.
	Slave	Communicate by Slave.

4.3.2.1.2 How to Set Parameter

The method of setting up of each parameter of the secondary LAN port (FJSV,pwga) shown in Table 4.1 is explained. If using PCI card (PW008GE4/PW008GE5/PW008QG1), please refer to the User’s guide attached with PCI card.

1. Search /etc/path_to_inst file for a fjgi interface.

```
# grep fjgi /etc/path_to_inst  <Return>
"/pci@83,4000/FJSV,pwga@1" 0 "fjgi"
```

2. The interface-related parameters should be written in the /platform/sun4us/kernel/drv/fjgi.conf file.
   - Example: 1000Mbps Full-Duplex is set.

```
name="fjgi" parent="/pci@83,4000" unit-address="1" AutoNegotiation_A="On"
LinkSpeed=”100” DuplexCapbilities_A="Full" FlowControl_A="None";
```

name: In the above example, the driver name is "fjgi".

parent: The left-hand portion of the pathname, containing the words '/FJSV,gwga@' in /etc/path_to_inst, is to be added here.
In this example, parent value is "/pci@83,4000".

unit-address: Please refer to the /etc/path_to_inst, and write the number (right number of "/FJSV,pwga@..". In this example, unit-address value is "1".

3. After 2, the fjgi.conf setting is reflected by reboot.

```
# /usr/sbin/shutdown -i6 -y -g0 <Return>
```

4.3.2.1.3 Caution

- Setting by fjgi.conf is necessary only when autonegation is not used for speed/duplex/flow or connecting partner cannot support autonegotiation.
- Since a setup the operation mode by the fjgi.conf file becomes effective per physical interface, when the VLAN interface is being used, a VLAN interface is also changed simultaneously.

4.3.2.2 Setting a JumboFrame

Use of JumboFrame makes it possible to expand the TCP/IP MTU size from 1500 to 9000. As the per-packet transmission size is expanded, the number of packets processed becomes fewer and thus the CPU load is reduced.

The procedure of setting JumboFrame is show below.

a. Add the following line to /etc/system file.

```
set fjgi:fjgi_jumbo=1
```

b. Create /etc/fjmtu.fjgiX file and write a MTU-size between 1500 to 9000. And reboot, TCP/IP MTU-size will be set. If you don't create this file, TCP/IP MTU-size will be the default of 9000.

```
vi  /etc/fjmtu.fjgiX
```

"X" is instance number. Instance number must be the same as /etc/hostname.fjgi* file's *.

Notes

- If you set a JumboFrame, it will be unable to transmit and receive the data of IEEE802.3 form.
- If you use two or more cards, or VLAN interfaces, enabling JumboFrame function becomes effective to all cards and all interfaces.
- When you perform file transfer by FTP, please set MTU size to less than 8232byte.
- Please use Jumbo Frames function only in 1000 Mbps communication. If you use Jumbo Frames in 10 Mbps or 100 Mbps, you won't be able to use the Jumbo Frame function.

4.3.2.3 To use ndd(1M) Utility

By using the ndd command, mode of operation can be changed dynamically.

Below shows how to reference and set each parameter by ndd command with examples.

Reference:

```
ndd  -get /dev/fjgi 'param'    (param: each parameter)

example) # ndd   -get   /dev/fjgi   'link_status'
```

Settings:

```
ndd  -set /dev/fjgi 'param' value    (param: each parameter, value: each
value)

example1) # ndd   -set   /dev/fjgi   'instance'   2
example2) # ndd   -set   /dev/fjgi   'adv_autoneg_cap'   0
```

To reflect the changed setting:

```
ndd  -set /dev/fjgi 'instance'  value
(Set the relevant interface instance number.)
ndd  -set /dev/fjgi 'adv_autoneg_cap'  0
(Once, turn off the function of AutoNegotiation.)
ndd  -set /dev/fjgi 'adv_autoneg_cap'  1
(Then, turn on the function of AutoNegotiation.)

example) In case, to set the setting of fjgi0 1000Full => 100Half.
 # ndd   -set   /dev/fjgi   'instance'   0
 # ndd   -set   /dev/fjgi   'adv_1000fdx_cap'   0
 # ndd   -set   /dev/fjgi   'adv_1000hdx_cap'   0
 # ndd   -set   /dev/fjgi   'adv_100fdx_cap'   0
 # ndd   -set   /dev/fjgi   'adv_autoneg_cap'   0
 # ndd   -set   /dev/fjgi   'adv_autoneg_cap'   1
```

A list of parameter can be used with ndd command.

Table 4.2 A list of parameters

Parameter	Status	Meaning
?	Read only	Display parameter list
link_status	Read only	0 : Link down 1 : Link up
link_speed	Read only	1000 : 1000Mbps 100 : 100Mbps 10 : 10Mbps
link_mode	Read only	0 : Half Duplex communication 1 : Full Duplex communication
autonego	Read only	0 : Autonegotiation is Off. 1 : Auotnegotiation is On.

Parameter	Status	Meaning
flow_control	Read only	0 : None (Not doing flow_control) 1 : LocSend (Can transmit pause frame only) 2 : Rem (Can receive pause frame only) 3 : Sym (Can receive and transmit pause frame)
cardtype	Read only	0 : SX(PW008GE4) 1 : T(PRIMEPOWER250/450 secondary LAN port, PW008GE5/PW008QG1)
instance	Read and write	Instance Number
adv_10fdx_cap	Read and write	Setting of 10Mbps/FullDuplex 0 : Invalid 1 : Valid (Default)
adv_10hdx_cap	Read and write	Setting of 10Mbp/HalfDuplex 0 : Invalid 1 : Valid (Default)
adv_100fdx_cap	Read and write	Setting of 100Mbps/FullDuplex 0 : Invalid 1 : Valid (Default)
adv_100hdx_cap	Read and write	Setting of 100Mbps/HalfDuplex 0 : Invalid 1 : Valid (Default)
adv_1000fdx_cap	Read and write	Setting of 1000Mbps/FullDuplex 0 : Invalid 1 : Valid (Default)
adv_1000hdx_cap	Read and write	Setting of 1000Mbps/HalfDuplex 0 : Invalid 1 : Valid (Default)
adv_pauseTX	Read and write	Setting of transmit pause frame 0 : Invalid 1 : Valid (Default)
adv_pauseRX	Read and write	Setting of receive pause frame 0 : Invalid 1 : Valid (Default)
adv_autoneg_cap	Read and write	Setting of AutoNegotiation 0 : Invalid (Fixed mode) 1 : Valid (Default)
adv_role_cap	Read and write	Setting of Role (Only 1000Mbps) 0 : Slave 1 : Master 2 : Auto (Default)
lp_10fdx_cap	Read only	Setting of link-partner 10Mbps/FullDuplex, when link up with AutoNegotiation. 0 : Invalid 1 : Valid

Parameter	Status	Meaning
lp_10hdx_cap	Read only	Setting of link-partner 10Mbps/HalfDuplex, when link up with AutoNegotiation. 0 : Invalid 1 : Valid
lp_100fdx_cap	Read only	Setting of link-partner 100Mbps/FullDuplex, when link up with AutoNegotiation. 0 : Invalid 1 : Valid
lp_100hdx_cap	Read only	Setting of link-partner 100Mbps/HalfDuplex, when link up with AutoNegotiation. 0 : Invalid 1 : Valid
lp_1000fdx_cap	Read only	Setting of link-partner 1000Mbps/FullDuplex, when link up with AutoNegotiation. 0 : Invalid 1 : Valid
lp_1000hdx_cap	Read only	Setting of link-partner 1000Mbps/HalfDuplex, when link up with AutoNegotiation. 0 : Invalid 1 : Valid
lp_pauseTX	Read only	Setting of link-partner transmit pause frame, when link up with AutoNegotiation. 0 : Invalid 1 : Valid
lp_pauseRX	Read only	Setting of link-partner receive pause frame, when link up with AutoNegotiation. 0 : Invalid 1 : Valid
lp_autoneg_cap	Read only	Setting of link-partner AutoNegotiation, when link up with AutoNegotiation. 0 : Invalid 1 : Valid
role_cap	Read only	The present Role setting, when 1000Mbps. 0 : Slave 1 : Master
jumbo	Read only	0 : JumboFrame function is not used. 1 : JumboFrame function is used.

Notes

- Because of the specification of ndd utility, if two or more processes execute ndd command for a fjgi interface at the same time, the value will be invalid.

- If you execute ndd command repeatedly, fjgi interface performance may drop.
- The values of link_speed, link_mode, autonego, flow_control are effective, only when link_status = 1. If link_status = 0, these values are invalid.
- The values of lp_10fdx_cap, lp_10hdx_cap, lp_100fdx_cap, lp_100hdx_cap, lp_1000fdx_cap, lp_1000hdx_cap, lp_pauseTX, lp_pauseRX, lp_autoneg_cap are effective, only when communication is done without Autonegation or Autonegation has not been established.
- The values set by ndd command are invalid after reboot.
- Since a setup of the operation mode by the ndd command becomes effective per physical interface, when IPv4/IPv6 interface, SNA/FNA interface or the VLAN interface is being used, those are also changed simultaneously.

4.3.2.4 Changing the setting of FCode

This section explains how to change the communication mode settings of FCode with examples.
If using PCI card (PW008GE4/PW008GE5/PW008QG1), please refer to the User's guide attached with PCI card.

It is needed when don't use autonegotiation for speed/duplex/flowcontrol or connecting partner cannot support autonegotiation.

[FCode Force mode (Speed Fixed and disable autonegotiation) setting method]

Search for the device path of 'FJSV' or 'pwga' in the OK prompt screen.

Example

```
ok show-nets <Return>
a) /pci@83,2000/FJSV,pwga@1
b) /pci@1f,4000/network@1,1
q) NO SELECTION
Enter Selection, q to quit:
```

In this example, a) is the device path of the pwga (secondary LAN port)

With the following command, the device is specified.

```
ok cd /pci@83,2000/FJSV,pwga@1 <Return>
```

Implement the following commands, it will change from AutoNegotiation mode to Force mode.
This setting is invalid during OBP (Open Boot Prom). PW008GE4 (1000BASE-SX) can use only 3) speed setting commands.

1) Role setting commands

```
slave-mode  (slave)
```

2) Half Duplex setting commands

```
half-duplex  (Half Duplex)
```

3) Speed setting commands

```
transfer-speed=100   (Force Speed: 100Mbps)
transfer-speed=10    (Force Speed: 10Mbps)
```

With the following command, the device setting information is displayed.

```
ok  .prp <Return>
```

Example: PRIMEPOWER 450

```
ok cd /pci@83,2000/FJSV,pwga@1 <Return>
ok .prp <Return>
    role                slave      *1
    duplex              half       *2
    transfer-speed      0000000a   *3
    cabinet-name        Cabinet#0
    board-name          Motherboard#1
    assigned-addresses  83002810 00000000 00100000 00000000 00010000
                        82002830 00000000 00110000 00000000 00010000
```

*1: Appears only when slave-mode is set.

*2: Appears only when half-duplex is set.

*3: Appears only when transfer-speed is set. [10Mbps:0xa, 100Mbps:0x64]

In the default, those *1,*2 and *3 are not appeared.

FCode Change back to default setting (AutoNegotiation mode) method

To return to the default setting after setting Fcode Force mode, do as follows:

On ok prompt screen, implement below command or power-off the system and power-on again. (Implement only reset command cannot back to default setting.)

```
ok reset-all <Return>
```

4.3.2.5 Network Install

The procedure which uses fjgi interface to install the Solaris OS via a network from an installation server is explained below.

1. Setup the install server and the clients to install the Solaris OS.
   About setup of install server and clients, refer to "Solaris 10 Installation Guide."
2. In an installation server, execute the command shown below and check the root directory of a client system. The root directory of a client system is described by the /etc/bootparams file of an installation server.

```
# grep CLIENT_NAME /etc/bootparams <Return>
```

Example

```
# grep  CLIENT_NAME /etc/bootparams
CLIENT_NAME  root=SERVER_NAME:/netinstall/Solaris_10/Tools/Boot
install=
```

In the example, the root directory of this client is set to /netinstall.

CLIENT_NAME is the name of client system.

SERVER_NAME is the name of install server.

Information

When the root directory name is not described by the /etc/bootparams file, please refer to "Solaris 10 Installation Guide."

3. Check the ok prompt of OpenBootPROM is displayed on the client system.
   If OS is booted, please stop a system by the shutdown(1M) command as follows.

```
# /usr/sbin/shutdown -i0 -g0 -y <Return>
```

Example

```
# /usr/sbin/shutdown -i0 -g0 –y
    .......
(shutdown messages are displayed)
    .......
```

```
ok
```

4. Search the device path to the secondary LAN port with a show-nets command from ok prompt of a client system.

```
ok show-nets <Return>
```

Example

```
ok show-nets
   a) /pci@83,2000/FJSV,pwga@1
   b) /pci@1f,4000/FJSV,pgsb@4
   q) NO SELECTION
   Enter Selection, q to quit:
```

5. From ok prompt of a client system, please start a client system using the secondary LAN port.

```
ok boot /pci@83,2000/FJSV,pwga@1 <Return>
```

6. Install the Solaris

4.3.2.6 Configuring VLAN interface

4.3.2.6.1 IEEE 802.1Q TagVLAN

The outline about a VLAN interface and directions required in order to setup VLAN interface are explained.

About IEEE802.1Q TagVLAN

By using VLAN, traffic management of two or more networks by a single physical interface becomes possible. In order to create a VLAN environment, which resembles Figure 4.1 Example of VLAN environment, a VLAN setup (VLAN ID and Tagged/Untagged) of a switch is required.

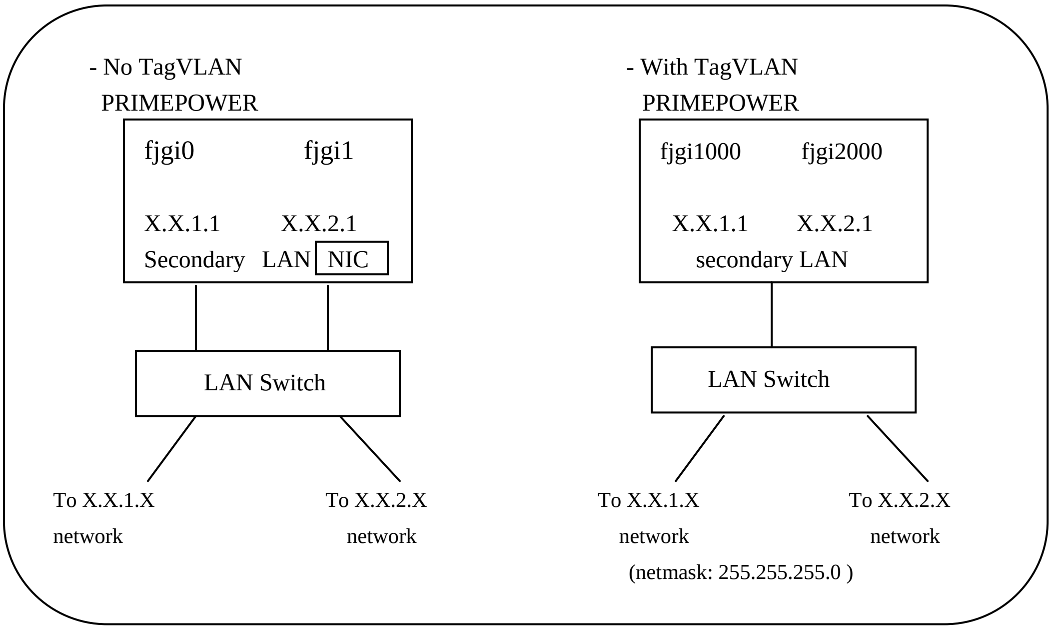


Figure 4.1 Example of VLAN environment

By using VLAN, traffic management of two or more networks by the single physical interface can be done. In order to create Figure 4.1 Example of VLAN environment, it is needed a VLAN setup (VLAN ID and Tagged/Untagged) of a switch.

The vlan numbers fjgi interface can offer:

VLAN ID	1 – 4094 (are available)
Max number of VLAN interfaces	1024 (can be created)

4.3.2.6.2 How to create the VLAN interface

-To create the VLAN interface.

By setting the interface number to more than 1000, it becomes possible to distinguish VLAN interface from physical interface.

How to set:

- In case to create the "VLAN ID = 1" VLAN interface from instance = 0 physical interface. Please refer to "4.3.1 Environment Setting ", and create the interface named as fjgi1000.
- In case to create the "VLAN ID = 231" VLAN interface from instance = 3 physical interface. Please refer to "4.3.1 Environment Setting", and create the interface named as **fjgi231003**.

```
Low 3 digits of VLAN interface number : physical instance number
Upper digits except low 3 digits of VLAN interface number: VLAN ID(1 -
4094).

 VLAN interface number = VLAN ID * 1000 + physical instance number
```

Note:

- When connecting with a LAN switch, Tag VLAN needs to be set to a LAN switch. (Please refer to a LAN switch specification which supported Tag VLAN.)
- Please use a VLAN interface only with TCP/IP protocol. Please do not use it with SNA/FNA and OSI

protocol.

- Since PRIMECLUSTER GLS 4.1A20 or previous version do not correspond to a VLAN interface, please do not use VLAN interface with those. PRIMECLUSTER GLS 4.1A30 or later (only Fast switching mode or NIC switching mode) can use VLAN interface.
- VLAN function can be used only in Solaris 8, Solaris 9 or Solaris 10.
- In the environment where PRIMECLUSTER has been installed, in case you use a VLAN interface, please check that the "SMAWdtcp" package has not been installed. When installed, please remove that package or do not use a VLAN interface.
- A VLAN interface uses about 700Kbyte at MTU size 1514byte or 900Kbyte at MTU size 9014byte of memory (at the time of no communicating). Therefore, when creating two or more VLAN interfaces and performing communication, a slowdown may occur due to the shortage of resources depending on the system configuration.

4.4 Messages

Messages by fjgi driver are listed in the following table.

Table 4.3 Console Messages of the fjgi driver

Message	Cause	Workaround
network connection down	Link down was happened.	When Link down not intended is generated, abnormality of the transmission line is thought. Please confirm the specification of the cable and the switch.
network connection up using portA speed: autonegotiation: duplex mode: flowctrl: (role:)*1	Connected	There is no problem.
	-speed **1000**: Transmitting and receiving by 1000Mbps **100**: Transmitting and receiving by 100Mbps **10**: Transmitting and receiving by 10Mbps	
	-autonegotiation **on**: Set in autonegotiation **off**: Not setting in autonegotiation	
	-duplex mode **full**: Transmitting and receiving by full duplex **half**: Transmitting and receiving by half duplex	
	-flowctrl **symmetric**: Doing Flowcontrol each other **remote send**: Accept Flowcontol only from the other. **local send**: Doing only own Flowcontrol **none**: Not doing Flowcontrol.	

Message	Cause	Workaround
	-role **master**: Communicate as Master. **slave**: Communicate as Slave.	
Illegal value for [ParameterName].	Error found in the parameter of definition file (fjgi.conf).	Check whether the definition file is correct.
fail to FragCount	Abnormalities were found in message fragmentation.	Please try re-activation of interface. If this is not a cause, report that to your authorized dealer.
Multiple fragments in descriptor area	Abnormalities were found in message fragmentation.	
bind to 802.2 failed	Using protocol was different.	
pci_config_setup_failed	PCI configuration space couldn't be obtained.	Installed physical memory may be insufficient or hardware is failed. If memory insufficient is not a cause, report that to your authorized dealer.
soft state alloc failed.	Driver internal resources cannot be obtained.	Installed physical memory may be insufficient. If this is not a cause, report them to your authorized dealer.
Allocation of descriptor memory failed	Driver internal resources on DMA couldn't be allocated.	
fail to ddi_dma_bind_handle	DMA resources couldn't be allocated.	
Could not allocate DMA handle	DMA resources couldn't be allocated.	
Could not bind descriptor memory		
fjgiallocthings failed !!	DMA resources couldn't be allocated.	
Unable to map adapter registers.	Mapping of register went wrong.	
ddi_get_iblock_cookie-ERROR	Interrupt resources couldn't be allocated.	
Unable to install interrupt routine.	Unable to install interrupt routine. Interrupt resources couldn't be allocated.	
ddi_create_minor_node failed	Creation of a device file went wrong.	
ATTACH failed	Driver resources couldn't be allocated.	
OPEN failed: ENOMEM		
CLOSE: stream==NULL	Driver resources couldn't be freed.	
fjgi_param_register error	The ndd parameter couldn't be allocated.	
fjgi_board_alloc_mem failed !!	Driver resources couldn't be allocated.	
Error filling TX ring	Transmit resources couldn't be allocated.	
status block can't alloced !!	Status information resources couldn't be allocated.	
status block can't alloced handle!	Status information resources couldn't be allocated.	
status block can't bind handle!	Status information resources couldn't be allocated.	

Message	Cause	Workaround
fjgi_board_init_mem: Failed to dma_alloc !!	DMA resources cannot be allocated.	
statistick block can't alloced!!	Statistic information resources couldn't be allocated.	
hwmib block can't alloced handle!		
hwmib block can't bind handle!		
fjgi_board_init_mem: Failed to dma alloc2!!	DMA resources cannot be allocated.	
Illegal value for LinkSpeed_A	The value of LinkSpeed_A of a setting file was wrong.	Please set a right value of LinkSpeed_A.
fjgi_hw_init:Step 22 failed !!	The error occurred in initialization.	Hardware failure was occurred. Please report to your authorized dealer.
fjgi_hw_init:Step 23 failed !!		
fjgi_hw_init:Step 43 failed !!		
Illegal combination of values AutoNeg and Speed	Auto speed couldn't be set in fixed mode.	Please set value except Auto in LinkSpeed_A.
Except for the above	There is the possibility that is Driver internal bug or Hardware failer.	Report that to your authorized dealer.

*1: This appears only when 1000Mbps is used.

Table 4.4 Machine management report messages

Message	Meaning	Workaround
fjgi_device_check: fjgi_hw_deinit failed !	The error occurred in initialization of an adapter.	There is the possibility of hard abnormalities. Report them to your authorized dealer.
fjgi_device_check: fjgi_hw_init failed !		
pci_config_setup_failed	Acquisition of PCI configuration space went wrong.	There is the possibility of the shortage of resources or hard abnormalities. Please check the empty space of a memory. Report them to your authorized dealer.

4.5 Using GigabitEthernet on a Cluster System

4.5.1 Support for Cluster System

The contents of support at the time of using by the cluster system, the environmental setting method, etc. are explained.

GigabitEthernet has the following functions on the cluster system:

- Operation standby mode

- 1:n operation standby mode
- Mutual standby mode
- TCP/IP communication
- Using to the cluster interconnect (PRIMECLUSTER). (But, using in a JumboFrame or as VLAN interface can not be performed)

The support ranges of takeover form are the following ranges.

a. PRIMECLUSTER

Taking over form	Support
IP	Support
MAC	Not Supported (Supported V4.1A10 or later)
IP+ MAC	Not Supported (Supported V4.1A10 or later)

Caution

Using over operation management LAN (LAN used for cluster operation management view) cannot be supported.

4.5.2 Cluster Environment Setup Procedure

Set up the cluster environment in the same way as for the other LAN driver, follow "Setting up the Network" in the "PRIMECLUSTER manual". Note that the secondary LAN port (fjgi interface) resource name is "fjgi".

4.5.3 Notes in Cluster Environment

Please use "PRIMECLUSTER 4.1 or later" for a cluster system to use fjgi interface. If an earlier version of cluster system is used, fjgi interface cannot be used for private LAN nor for IP address fail-over on public LAN.

When using fjgi interface as the cluster interconnect, please perform the following command before initial composition setup.

```
# ifconfig  fjgi* plumb <Return>
```

* is instance-number

Then, please execute the following command and check that a MTU size of fjgi interface is not 9000byte (JumboFrame is not set up).

```
# ifconfig  fjgi* <Return>
```

* is instance-number

GigabitEthernet in a JumboFrame function cannot be used to the cluster interconnect.

GigabitEthernet as VLAN interface cannot be used to the cluster interconnect.

Chapter 5 Precautions

This chapter explains necessary precautions.

5.1 Limitations and known bugs for Solaris

This chapter explains limitations and known bugs for Solaris.

Table 5.1 Limitations and known bugs for Solaris

No	Limitations and known bugs Recommended actions	Remarks
1	The following patches are required to be installed in the following order after installation of Solaris 10. In particular 119254-06 must be installed before 119254-19 or later or equivalent. If the installation order is not followed problems may occur. E.g. non-global zone cannot be installed, optional packages and patches cannot be installed correctly. 1. 120719-01 or later SunOS 5.10: gzip patch 2. 121296-01 or later SunOS 5.10: fgrep Patch 3. 118815-03 or later SunOS 5.10: awk patch 4. 120900-03 or later SunOS 5.10: libzonecfg Patch 5. 121133-02 or later SunOS 5.10: zones library and zones utility patch 6. 119254-06 SunOS 5.10: Install and Patch Utilities Patch 7. 119254-19 or later: SunOS 5.10: Install and Patch Utilities Patch 8. 119317-01 or later: SunOS 5.10: SVr4 Packaging Commands (usr) Patch 9. 119042-02 or later: SunOS 5.10: patch usr/sbin/svccfg	Solaris 10 3/05 and Solaris 10 1/06 only
	Install these patches as soon as possible after installation of Solaris 10. Also make sure of the following notes when applying/removing any patches. ● Read README files of the patches before applying them. ● Remove patches in the global zone and not in the non-global zone if needing to remove patches from the system.	
2	The following patch is required to use the NFS version 4. NFS version 4 has limitations. ● 119828-04 or later SunOS 5.10: nfssrv Patch	Solaris 10 3/05 only
	Install the above patches.	
3	For Dynamic Reconfiguration (DR) and PCI Hot Plug, the following patches are required to be installed. 119254-06 or later SunOS 5.10: Install and Patch Utilities Patch 118822-08 or later SunOS 5.10: kernel Patch 913732-01 or later Enhanced Support Facility 2.5: Dynamic configuration core command patch	Solaris 10 3/05 only
	Install the above patches.	
4	For CPC (CPU Performance Counter) (cpustat(1M), cputrack(1M), libcpc(3LIB)), the following patches are required to be installed. 119254-06 or later SunOS 5.10: Install and Patch Utilities Patch 118822-08 or later SunOS 5.10: kernel Patch	Solaris 10 3/05 only
	Install the above patches.	

No	Limitations and known bugs	Recommended actions	Remarks
5	For growfs(1M), the following patch is required to be installed. 120254-02 or later SunOS 5.10: ufs Patch	Install the above patches.	Solaris 10 3/05 and 1/06 only
6	When using any of the following PGX cards and monitors, the display monitor does not enter standby mode if you haven't logged on from CDE (Common Desktop Environment). ● PGX frame buffer (X3660A) ● PGX64 frame buffer (X3768A/A-A) ● Second monitor (X7128A/AA/AJ, X7128B) To use PGX32 frame buffer (X3668A/A-A, X3668B/B-A/B-B), the following patches are required to be installed. 119254-06 or later SunOS 5.10: Install and Patch Utilities Patch 119309-03 or later SunOS 5.10: PGX32 Graphics	The above removes the PGX frame buffer and monitor limitation. When using the PGX, PGX64 frame buffer and a second monitor, ensure you turn off the power to the display monitor when the monitor is not in use.	Solaris 10 3/05 only
7	Some optional drivers are not yet supported with Solaris 10.	Contact your support engineer for details.	
8	/etc/resolv.conf file might not be created when you select "DNS" name service during OS installation.	Install the following patch. ● 119252-02 or later SunOS 5.10: System Administration Applications Patch	Solaris 10 3/05 only
9	svccfg(1M) might be terminated when editprop subcommand is used. \# svccfg svc:> select /network/inetd svc:/network/inetd> editprop :q svccfg: unrecognized character "	Use setprop subcommand of svccfg(1M) instead of editprop to modify properties of service.	
10	For Kernel debugger (kmdb(1), mdb(1) -K) on SPARC64 GP, the following patches are required to be installed. 118822-23 or later SunOS 5.10: kernel Patch	Install the above patch.	Solaris 10 3/05 only
11	Solaris Live Upgrade using lu(1M) and lucreate(1M) might fail with the following error when creating a mirror disk. # lucreate -m /:/dev/md/dsk/d10:ufs,mirror –m \ /:/dev/dsk/c1t2d0s0,d11:attach -m/:/dev/dsk/c1t3d0s0,d12:attach -n newBE Discovering physical storage devices Discovering logical storage devices Cross referencing storage devices with boot environment configurations Determining types of file systems supported Validating file system requests ERROR: file system option <mirror> is not valid on this system ERROR: cannot use file system configuration </:/dev/md/dsk/d10:ufs,mirror> ERROR: cannot create new boot environment using file systems as configured ERROR: please review all file system configuration options ERROR: cannot create new boot environment using options provided		

No	Limitations and known bugs Recommended actions	Remarks
	Solaris Live Upgrade is not supported with RAID-1(mirror)	
12	Custom Jumpstart installation for mirror volumes using a profile that has filesys keyword of both original and target disk, will fail and the following error message will be shown at first boot after the installation. metattach: host-name: dx: can't attach labeled submirror to an unlabeled mirror	
	Create a one-way mirror in the profile file. Define a primary submirror Disk as filesys keyword. Then attach additional submirrors with the finish script to create a two-way mirror. ● Do not include cylinder 0 of the disks in meta devices. ● The disks which constitute a two-way mirror should have the same specification and configuration. Examples of a profile file and a finish script are shown as follows: 1) profile file # profile keywords profile values # ---------------- ----------------- : : filesys c0t1d0s4 0:1 unnamed filesys mirror:d100 c0t1d0s0 200 / metadb c0t1d0s3 size 8192 count 2 2) finish script #!/bin/sh : prtvtoc /dev/rdsk/c0t1d0s2 > /a/c0t1d0.vtoc fmthard -s /a/c0t1d0.vtoc /dev/rdsk/c0t0d0s2 metadb -a -c 2 c0t0d0s3 metainit d102 1 1 c0t0d0s0 metattach d100 d102 :	
13	in.routed might generate a core dump under the following conditions. 1) No entry of localhost name in /etc/hosts and 2) No /etc/defaultrouter file and 3) Reboot system	
	Install the following patch. ● 119712-03 or later SunOS 5.10: usr/sbin/in.routed Patch	
14	Package remove using pkgrm(1M) might fail if the package provides SMF services and the package has been removed and installed repeatedly. ## Removing pathnames in class <manifest> svc:/system/fjsvmadm-evhandsd:default remains enabled; aborting pkgrm: ERROR: class action script did not complete successfully	

No	Limitations and known bugs Recommended actions	Remarks
	Follow these instructions to remove a package. (For example SUNWabc) 1) Re-install the package to system. # pkgadd SUNWabc 2) Find out path name of SMF service manifest in the package. # grep SUNWabc /var/sadm/install/contents | \\ grep /var/svc/manifest | awk '{ print $1 }' \| grep xml /var/svc/manifest/system/abc.xml 3) Run the following command. # svccfg -s smf/manifest delpg {$prp_mfst} $prp_mfst strings must be specified by removing first “/” srting of the manifest path name with all “/” and ”.” replaced by “_”. Here is an example for /var/svc/manifest/system/abc.xml at step 2). 4) Remove package. # pkgrm SUNWabc	
15	"netstat -i" results maybe corrupted when the network interface on the system is unplumb/plumb by ifconfig(1M), if the system has multiple physical network interfaces. This problem is solved by the following patch. 119990-01 or later SunOS 5.10: netstat patch	Solaris 10 3/05 only
16	Network instance number on Quad Fast Ethernet and Dual Gigabit Ethernet Card might be assigned randomly to physical network interfaces when the card is installed after OS installation. # grep fjqe /etc/path_to_inst "/pci@81,4000/pci@2/FJSV,pl4b@4" 0 "fjqe" "/pci@81,4000/pci@2/FJSV,pl4b@5" 3 "fjqe" "/pci@81,4000/pci@2/FJSV,pl4b@6" 5 "fjqe" "/pci@81,4000/pci@2/FJSV,pl4b@7" 7 "fjqe" "/pci@85,4000/pci@2/ethernet@4" 1 "fjqe" "/pci@85,4000/pci@2/ethernet@5" 2 "fjqe" "/pci@85,4000/pci@2/ethernet@6" 4 "fjqe" "/pci@85,4000/pci@2/ethernet@7" 6 "fjqe" Install the following patch before installation of Quad Ethernet Cards or Quad GigabitEthernet Cards. 118822-23 or later SunOS 5.10: kernel Patch	Solaris 10 3/05 only
17	mpstat(1M) takes an extra interval time at the ending of the command when the command is executed with interval and count. This problem is solved by the following patch. 118373-01 or later SunOS 5.10: mpstat Patch	Solaris 10 3/05 only
18	pkgadd(1M) -R command might fail when target directory is on a remote NFS server. This problem is solved by the following patch. 119254-06 or later SunOS 5.10: Install and Patch Utilities Patch	Solaris 10 3/05 only
19	The following message might be displayed if during optional driver package installation the PCI Card is not installed. chgrp: //dev/{driver_name}: No such file or directory There is no impact on the system. The driver and required PCI Card work after a system reboot.	

No	Limitations and known bugs Recommended actions	Remarks
20	"Internet (IP) Address" in "Workstation information" of CDE environment is shown with a IPv6 unicast address as "::FFFF:***.***.***.***". This problem is solved by the following patch. 119284-01 or later CDE 1.6: sdtwsinfo patch	Solaris 10 3/05 only
21	During system shutdown, some messages similar to the following might be displayed on the console. syslogd: /var/opt/FJSVmadm/evh/evh_pipe: Broken pipe NFS fsinfo failed for server xxxx: error 5 (RPC: Timed out) Ignore the message. It has no impact on the system.	
22	ifconfig(1M) displays "Need net number for mask" when the command is executed with plumb and up option at the same time. # ifconfig hme0 plumb host netmask + broadcast + up Need net number for mask Setting netmask of hme0 to 255.255.255.0 Ignore the "Need net number for mask" message. The message will not be displayed when plumb and up option are specified separately. # ifconfig hme0 plumb # ifconfig hme0 host netmask + broadcast + up Setting netmask of hme0 to 255.255.255.0	
23	Solaris Management Console(SMC) 2.1, User Performance ("System Status"-> "Performance" -> "System" -> "Users") does not show any information and the following error messages displays on the console. CIM_ERR_FAILED: java.lang.UnsupportedClassVersionError: com/sun/wbem/solarisprovider/srm/Solaris_ActiveUser (Unsupported major.minor version 49.0) Use ps(1), prstat(1M) and pgrep(1) to check and report active process statistics instead of the SMC feature.	
24	The following message might be shown during Solaris 10 installation. application/font/fc-cache:default failed (see 'svcs -x' for details) Ignore the message. It has no impact on the system.	
25	The following message might be shown during Solaris 10 installation. /usr/sbin/pmconfig: cannot open "/dev/pm": No such file or directory Ignore the message. It has no impact on the system.	
26	After Solaris 10 installation is finished, the following messages might be shown at first boot. java[16552]: [ID 874347 user.error] libpkcs11: open /var/run/kcfd_door: No such file or directory java[16552]: [ID 523743 user.error] libpkcs11: /usr/lib/security/pkcs11_softtoken.so unexpected failure in ELF signature verification. System may have been tampered with. Cannot continue parsing /etc/crypto/pkcs11.conf Ignore these messages. They have no impact on the system.	

<table>
<tr><td rowspan="2">No</td><td>Limitations and known bugs</td><td rowspan="2">Remarks</td></tr>
<tr><td>Recommended actions</td></tr>
<tr><td rowspan="2">27</td><td>There are some differences in behavior of MIB between SNMP agents of SMA and SEA.
● sysObjectID (MIB to show system device type)
SEA shows the value as “enterprises.42.2.1.1”, however, SMA shows the value as “netSnmpAgentOIDs.3”.
● snmpEnableAuthenTraps (MIB to show permission of trap of authorization failure)
SEA shows the value as “enabled(1)”, however, SMA shows the value as “disabled(2)”.
● ifSpeed (MIB for supported bandwidth speed of the network interface)
The results may be different between SEA and SMA.
● ifType
The results may be different between SEA and SMA.</td><td rowspan="2"></td></tr>
<tr><td>Use SEA instead of SMA. The following disables SMA and enables only SEA.
1) Stop SMA and rename rc startup script of SMA.
/etc/init.d/init.sma stop
mv /etc/rc3.d/S82initsma /etc/rc3.d/_S82initsma
2) Rename /etc/rc3.d/S75seaport
mv /etc/rc3.d/S75seaport /etc/rc3.d/_S75seaport
3) Set port number from 16161 to 161 for SEA in /etc/snmp/conf/snmpdx.reg
4) Create configuration files for SEA
cp /etc/snmp/conf/mibiisa.rsrc- /etc/snmp/conf/mibiisa.rsrc
cp /etc/snmp/conf/snmpdx.acl /etc/snmp/conf/mibiisa.acl
5) Restart SEA
/etc/init.d/init.snmpdx stop
/etc/init.d/init.snmpdx start</td></tr>
<tr><td rowspan="2">28</td><td>The following error messages might be logged in SMF service log file.
ERROR: Restarter: Ignoring REMOVE_INSTANCE command for unknown service svc:/TEMP/{FMRI}.</td><td rowspan="2"></td></tr>
<tr><td>Ignore these messages. They have no impact on the system.</td></tr>
<tr><td rowspan="2">29</td><td>Packages that contain SMF service can not be removed using pkgrm(1M) -R option from the other boot system,and the following messages are displayed during the next system boot.
SunOS Release 5.10 Version Generic 64-bit
Copyright 1983-2005 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
Hostname: host-name
Starting SCF daemon.
svc.startd[7]: svc:/system/fjsvabc:default: Method "/lib/svc/method/fjsvabc" failed with exit status 1.
svc.startd[7]: svc:/system/fjsvabc:default: Method "/lib/svc/method/fjsvabc" failed with exit status 1.
svc.startd[7]: svc:/system/fjsvabc:default: Method "/lib/svc/method/fjsvabc" failed with exit status 1.
[system/fjsvabc:default failed (see 'svcs -x' for details)]</td><td rowspan="2"></td></tr>
<tr><td>-R option for pkgrm (1M) has a limitation for packages that include SMF service. Remove the package on the local file system after booting the remote image.</td></tr>
</table>

No	Limitations and known bugs Recommended actions	Remarks
30	A /noautoshutdown file might be created at first boot after Solaris 10 installation. If /noautoshutdown file exists power management and power saving could be disabled.	
	Check for and remove /noautoshutdown file if you need to enable power management and power saving features.	
31	Patch installation may fail with the following error message when the patch binary is located in /(root) directory. # patchadd xxxxxx-xx Assertion failed: *a_gzPath != ‘\0’, file zones.c, line 2113	Solaris 10 3/05 only
	This problem is solved by the following patch. 119254-06 or later SunOS 5.10: Install and Patch Utilities Patch	
32	Installation of non-global zone will fail if the patches that have .us and .u instances, including the following patches, are installed in the system. 118822-02 SunOS 5.10: Kernel Patch 119309-03 SunOS 5.10: PGX32 Graphics 118708-03 SunOS 5.10: Sun XVR-1200 and Sun XVR-600 Graphics Accelerator Patch 118708-04 SunOS 5.10: Sun XVR-1200 and Sun XVR-600 Graphics Accelerator Patch If this problem occurs, the following errors show up when installing non-global zones and the operation fails. # zoneadm -z zone01 install Preparing to install zone <zone01>. Creating list of files to copy from the global zone. Copying <129399> files to the zone. Initializing zone product registry. Determining zone package initialization order. Preparing to initialize <1119> packages on the zone. Initialized <1119> packages on zone. Zone <zone01> is initialized. Installation of these packages generated errors: <SUNWcakr>	Solaris 10 3/05 only
	Immediately install the following patch as soon as Solaris 10 is installed. 119254-06 or later SunOS 5.10: Install and Patch Utilities Patch If you have already installed 118822-02, 119309-03, 118708-03, 118708-04 without 119254-06, follow the below procedure to recover the system. 1) Install 119254-06 (or later). 2) Install 118822-08 (or later) and 118708-06 (or later). 3) If 119309-03 has been installed, remove 119309-03 and re-install 119309-03. 4) Reboot system.	
33	During system booting, port monitor (like ttymon) log files are deleted and the following error message is displayed. Moreover, once this error message is output, no further log is saved. ttymon cannot create log file "/var/saf/zsmon/log": No such file or directory	Solaris 10 3/05 only
	This problem is solved by the following patch. 118868-01 or later SunOS 5.10: ttymon patch	

No	Limitations and known bugs	Remarks
	Recommended actions	
34	On PRIMEPOWER 200 (360MHz or higher) / 400(360MHz or higher)/600/650(except SPARC64 V)/800/850(except SPARC64 V)/1000/1500(except SPARC64 V)/2000, both syslog message and FMA message are displayed when a Memory 1 bit error(CE) occurs. e.g.) FJSV,SPARC64-IV: [ID 635115 kern.notice] Softerrors: FJSV,SPARC64-IV: [ID 663638 kern.notice] Seen 0 Intermittent and 1 Corrected Softerrors FJSV,SPARC64-IV: [ID 909492 kern.notice] from SIMM C0S00-SLOT#B00 (synd = 0x13, addr = 0x75268280). FJSV,SPARC64-IV: [ID 805745 kern.notice] Softerror: Persistent ECC Memory Error FJSV,SPARC64-IV: [ID 306888 kern.notice] Corrected SIMM C0S00-SLOT#B00 FJSV,SPARC64-IV: [ID 518845 kern.notice] Detected by Module ID = 0x87 (135) unix: [ID 618185 kern.notice] NOTICE: Scheduling removal of page 0x00000000.75268000 fmd: [ID 441519 daemon.error] SUNW-MSG-ID: SUN4US-8000-7D, TYPE: Fault, VER: 1, SEVERITY: Minor EVENT-TIME: Mon Feb 21 21:26:51 JST 2005 PLATFORM: FJSV,GPUSC-M, CSN: -, HOSTNAME: colm2 SOURCE: cpumem-diagnosis, REV: 1.3 EVENT-ID: aaf47b25-cfd2-4984-f598-e81bcbba274f DESC: The number of single bit errors associated with this memory module continues to exceed acceptable levels. Refer to http://www.fujitsu.com/global/services/computing/server/unix/prmpwr_msg/SUN4US-8000-7D for more information. AUTO-RESPONSE: An attempt will be made to remove this memory page from service. IMPACT: Total system memory capacity will be reduced as pages are retired. REC-ACTION: Schedule a repair procedure to replace the affected memory module. Use fmdump -v -u <EVENT_ID> to identify the module.	
	Ignore these syslog messages. They have no impact on the system.	
35	System does not display CPU error messages via FMA if the CPU at fault has not been replaced; even if the CPU detected the same error previously. This problem only happens on systems installed with SPARC64 V.	
	This is just a messaging issue. It has no impact on the system as such.	
36	After an upgrade to install Solaris 10, the following message is displayed when format (1M) command is executed. # format Unknown controller 'MD21' - /etc/format.dat (xx) Searching for disks...done	
	There is no impact on the system. The message is not displayed when the following entries are removed from /etc/format.dat. disk_type = "XXXX" \ : ctlr = MD21 \ : ncyl = XXXX : acyl = X : pcyl = XXXX : nhead = X : nsect = XX \ : rpm = XXXX : bpt = XXXXX	

No	Limitations and known bugs Recommended actions	Remarks
37	The -R option for pkgadd(1M), pkgrm(1M), patchadd (1M), and patchrm(1M) utilities have limitations when zones are included in the remote target image.	Solaris 10 3/05 only
	When a package and/or patch needs to be removed from non-global zone, install the following patch before patch/package removal. ● 119254-19 or later SunOS 5.10: Install and Patch Utilities Patch	
38	LiveUpgrade installation and Solaris Upgrade Installation of non-global zones have limitations.	
	Announcement will be made when support for this feature is enabled.	
39	When you install zone using zoneadm(1M), the following error messages with FJSVdr or FJSVparam is displayed. # zoneadm -z myzone install Preparing to install zone <myzone>. Creating list of files to copy from the global zone. Copying <2784> files to the zone. Initializing zone product registry. Determining zone package initialization order. Preparing to initialize <1081> packages on the zone. Initialized <1081> packages on zone. Zone <myzone> is initialized. Installation of these packages generated errors: <FJSVdr> Installation of <19> packages was skipped. The file </work/myzone/root/var/sadm/system/logs/install_log> contains a log of the zone installation.	
	They have no impact on the system.	
40	During boot system, the following warning message may be displayed. WARNING: Time of Day clock error: reason [Reversed by 0x2]. -- Stopped tracking Time Of Day clock.	
	Ignore the message. It has no impact on the system.	
41	The following option for patchadd(1M) does not work. -d , -u, -n, -B, -k, -P, -x	
	There is no workaround now.	
42	The following message might be displayed on the console. snmpXdmid: [ID 216524 daemon.error] Registration with DMI failed. err = 831.	
	If there is no map file except test.map in /var/dmi/map, it means DMI is not used, then disable DMI service provider in the following way. ● On Solaris 10 OS 6/06 and earlier. # mv /etc/rc3.d/S77dmi /etc/rc3.d/_S77dmi ● On Solaris 10 11/06 and later. # svcadm disable svc:/application/management/dmi:default	
43	When removing a patch with patchrm(1M), you may fail to remove it with the following messages. First RE may not be null Patchrm is terminating. WARNING: patchrm returned <21>	
	Install the following patch. ● 119254-19 or later SunOS 5.10: Install and Patch Utilities Patch	

No	Limitations and known bugs Recommended actions	Remarks
44	I Installation and removal of a package or patch may fail in a system with non-global zones, under the following conditions. ● non-global zone is configured using zonecfg(1M), but not installed by zoneadm(1M). ● non-global zone is just booted by zoneadm(1M) after installation, without any non-global zone settings such as host name and root password. ● non-global zone is being installed or removed by zoneadm(1M).	
	Make sure the initial setup like hostname and password configuration of all non-global zones has been done and all the non-global zones are in “running” state before installation or removal of package and patch	
45	The following message may be displayed during an upgrade installation from Solaris 9. network/nfs/server:default failed repeatedly (see 'svcs -x' for details)	
	Ignore the message. It has no impact on the system.	

5.2 Specification and incompatibility for Solaris

This chapter explains specification and incompatibility for Solaris.

Table 5.2 Specification and incompatibility for Solaris

No	Specification and incompatibility Recommended actions	Remarks
1	Solaris 10 provides Solaris Service Manager (SMF) to enhance the UNIX startup script (so called RC script) and system daemons during boot up. Due to this new feature, there is some unexpected and incompatible behavior compared to Solaris 9 or older versions.	
	Refer to SMF documentation as follows and smf(5) manual page. Solaris 10 System Administrator Collection >> System Administration Guide: Basic Administration http://docs.sun.com/app/docs/doc/817-1985/	
2	/usr/bin/ln has been changed in Solaris 10. ● Solaris 9 or older versions. /usr/bin/ln will overwrite file if target file already exists. ● Solaris 10. /usr/bin/ln will fail if target file already exists.	
	The same behavior occurs with Solaris 9 or older versions if the -f option is used with the ln command.	
3	If the DHCP sever has multiple network interfaces, it may not be able to deliver an IP address to a DHCP client because of DHCP server settings.	
	pntadm(1M) -s option needs to be specified with "uname -n" or the IP address of the primary network interface. If a non-primary IP address is specified with pntadm -s, DHCP server will not be able to deliver an IP address to the DHCP client.	

<table>
<tr><td rowspan="2">No</td><td>Specification and incompatibility</td><td rowspan="2">Remarks</td></tr>
<tr><td>Recommended actions</td></tr>
<tr><td>4</td><td>nslookup(1M) results on Solaris 10 differ from those of Solaris 9 or older versions.
e.g.)
● Solaris 9
nslookup
> aaa213.sample.test.com.
Server: aaat11.sample.test.com
Address: xxx.xxx.xxx.nnn

Name: aaa13.sample.test.com
Address: xxx.xxx.xxx.mmm
Aliases: aaa213.sample.test.com, aaa113.sample.test.com
● Solaris 10
nslookup
> aaa213.sample.test.com.
Server: xxx.xxx.xxx.nnn
Address: xxx.xxx.xxx.nnn#xx

aaa213.sample.test.com canonical name = aaa113.sample.test.com.
aaa113.sample.test.com canonical name = aaa13.sample.test.com.
Name: aaa13.sample.test.com
Address: xxx.xxx.xxx.mmm

* aaa113.sample.test.com is an alias of aaa13.sample.test.com
* aaa213.sample.test.com is an alias of aaa113.sample.test.com.</td><td></td></tr>
<tr><td rowspan="2">5</td><td>1) Physical device (/devices) entries for hard disk drive are removed at system reboot if the hard disk driver is removed from the system before system reboot.
e.g.)
cd /dev/rdsk
ls -l c1t6d0*
lrwxrwxrwx 1 root root 48 May 28 11:19 c1t6d0s0 ->../../devices/pci@1f,0
/pci@5/scsi@2/sd@6,0:a,raw
ls -lL c1t6d0*
c1t6d0s0: No such file or directory
2) “iostat –E” and “drcstat –device” may not show all connected physical devices right after system boot.</td><td rowspan="2"></td></tr>
<tr><td>This behavior of devfs on Solaris 10, is to be expected. /devices entries are updated dynamically when each device is actually attached. As a result, device entries that have not been attached after system boot, are not displayed by those commands.</td></tr>
<tr><td rowspan="2">6</td><td>If non-global zones are not booted, patchadd(1M) and patchrm(1M) will make all non-global zones boot up temporarily during patch installation and removal. As a result the total time for patch installation and removal will take much longer than booting up in single user mode.</td><td rowspan="2"></td></tr>
<tr><td>Boot all non-global zones in single user mode before installing and removing patches.
Example)
global# zoneadm –z myzone boot -s</td></tr>
</table>

<table>
<tr><td rowspan="2">No</td><td>Specification and incompatibility</td><td rowspan="2">Remarks</td></tr>
<tr><td>Recommended actions</td></tr>
<tr><td rowspan="2">7</td><td>The following messages may be displayed during patch installation using patchadd(1M).
Package {PKGNAME} from directory {PKGNAME} in patch {PATCHID} is not installed on the system.
Architecture for package {PKGNAME} from directory {PKGNAME} in patch {PATCHID} differs from the package installed on the system.
Example)
patchadd 118822-18
....

Validating patches...

Loading patches installed on the system...

Done!

Loading patches requested to install.

Package SUNWcti2 from directory SUNWcti2.u in patch 118822-18 is not installed on the system.
Package SUNWdrcr from directory SUNWdrcr.u in patch 118822-18 is not installed on the system.
Package SUNWidn from directory SUNWidn.u in patch 118822-18 is not installed on the system.
Architecture for package SUNWdrr from directory SUNWdrr.u in patch 118822-18 differs from the package installed on the system.
Package SUNWwrsd from directory SUNWwrsd.u in patch 118822-18 is not installed on the system.
Architecture for package SUNWefc from directory SUNWefc.u in patch 118822-18 differs from the package installed on the system.
Package SUNWwrsm from directory SUNWwrsm.u in patch 118822-18 is not installed on the system.
Architecture for package SUNWcakr from directory SUNWcakr.u in patch 118822-18 differs from the package installed on the system.
Architecture for package SUNWcpr from directory SUNWcpr.u in patch 118822-18 differs from the package installed on the system.
Done!
.....</td><td rowspan="2"></td></tr>
<tr><td>Ignore these messages. They have no impact on the system.</td></tr>
</table>

<table>
<tr><td rowspan="2">No</td><td>Specification and incompatibility</td><td rowspan="2">Remarks</td></tr>
<tr><td>Recommended actions</td></tr>
<tr><td rowspan="2">8</td><td>In Solaris10, rsh(1) will output messages according to the value of the LANG variable that is defined in /etc/default/init. However, in the previous Solaris versions, the system will use the LANG=C locale for a command, that is run at the server side by rsh(1), without mentioning any specific value for the LANG variable.</td><td rowspan="2"></td></tr>
<tr><td>In Solaris 10, if the LANG variable is not set explicitly to a process that is executed by inetd(1M), the process will succeed the value of this variable from inetd(1M). To stop a process from succeeding the value of the LANG variable from inetd(M), change the setup with the following command:

e.g.) in case of rsh(1)
#inetadm -m network/shell:default inherit_env=FALSE

For details of the setting, see the inetd(1M) man page.</td></tr>
<tr><td rowspan="2">9</td><td>Patch installation using patchadd(1M) will fail if the system has any zones and if the patch archive is on NFS server.</td><td rowspan="2"></td></tr>
<tr><td>Copy the patch archive from NFS server to local file system such as /tmp and install the patch.</td></tr>
</table>

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